

2021

Hawai'i Annual Code Challenge (HACC)

Challenge Title	Play Pono Points Game/App
Department / Organization	DLNR (DOCARE, State Parks, Aquatic Resources, and DOFAW)
Subject Matter Contact	Marigold Zoll (DOFAW)
SME Phone & Email	Marigold.s.zoll@hawaii.gov (808) 286-6378

The Challenge

Describe situation to be solved

High numbers of outdoor recreationalists are behaving in ways that are socially unacceptable and/or damaging to the environment. We want to change the way people interact with the Hawaiian environment and local culture by developing a campaign to educate, reward, and motivate people to make pono choices. This change in behavior will improve community interactions and foster an ethic of aloha aina in alignment with host culture values.

A diverse array of people from all over the world now visit and live in Hawaii. As visitors, military personnel, new residents, and even longtime residents who may not be in touch with local customs, individuals may not know how their choices impact local customs and the unique Hawaiian environment.

This challenge seeks to educate people about:

- Local customs (saying hello when you arrive, respecting private property, asking for permission before entering or using someone's property),
- Sensitive Hawaiian environments (endangered wildlife, coral reefs, erosion, rapid ohia death),
- Leave no trace ethics (pick up trash, pick up dog poop, contained camp fires),
- Safety (hike/float plan, carry water/snacks/phone, let someone know where you are going, keeping dogs on leash, going on sanctioned trails),
- Neighborhood sensitivities (being quiet next to houses, parking legally, not flying drones in restricted areas).

by letting them know what these things are, rewarding good choices by allotting points that can be redeemed for products and services at local businesses and DLNR facilities, and using social pressure and game reward features to highlight high earners and compel people to participate.

DLNR management and crowd sourced data: Communities upload local complaints and customs that are often disregarded at a location; Managers

	upload cultural, environmental, safety, customs that are at risk in a location; anchor platform in Hawaiian cultural values. Business and managers upload rewards to motivate/incentivize participation.
<p>Preconditions <i>(How does it work now)</i></p>	<ol style="list-style-type: none"> 1. Residents and tourist find out about features and go as they please – disregarding local customs and conditions (could be on purpose or accidentally/unknowingly). 2. Social media amplifies use of popular and unsanctioned areas – normalizing illegal use or misbehavior. 3. Communities complain to agencies and elected officials. 4. Agencies struggle to manage features with limited budgets. 5. Volunteer opportunities are limited and not well advertised; local business compete with big box chains and out of state franchises. 6. 808-cleanups app demonstrates the power of social reward motivating folks to do the right thing – this could be amplified by actual rewards and exclusive access/opportunities from DLNR. 7. Platforms like Ticktock duet demonstrate the ability to validate achievements for point redemption and success in participation (people like it).
<p>Assumptions/Issues <i>(list any conditions that could impact the solution)</i></p>	<ol style="list-style-type: none"> 1. Assume people care about behaving in a socially acceptable way; 2. Assume that folks would be motivated by the rewards from local business and exclusive volunteer or access to DLNR managed sites; 3. Assume local business would want to participate (at least one business polled indicted interest in participating and thinks others would too); 4. Assume that folks would be motivated by social reward (likes, leader boards, etc.); 5. Assume people would want to start playing and would stay engaged; 6. Assume community members would be willing to input site specific data; 7. Assume managers could characterize issues per place: <p>Generate a list of qualifying actions and earned number of points, for example:</p> <ul style="list-style-type: none"> - Decrease turtle harassment – Ticktock style duet - video showing how people should observe and appreciate turtles from a respectful distance; player uploads video mimicking behavior to earn 15 points; - Increase knowledge of rapid ohia death – player uploads GPS point and picture showing use of ROD boot brushes and spraying boots/gear with Isopropyl to decontaminate before hiking (10 points). Bonus points for bringing your own brush and alcohol (extra 5). Bonus points for getting other people to use existing stations and isopropyl (extra 3); - Increase awareness of Ohia and what trees look like- player uploads GPS point and picture of flowering Ohia tree (5 points) (valuable information of locations and times when ohia are flowering for future seed collections); - There could be opportunities for bonus points to all players or players who logged points for an overall reduction in hiker rescues or eliminating 50% of short cuts on a trail to promote community engagement and participation.

	<p>8. Assume managers could create/offer exclusive opportunities or access (i.e., volunteer at Mt. Kaala Natural Area Reserve; free night camping at Malaekahana State Park).</p>
<p>Current Approach <i>(how is situation currently being handled)</i></p>	<ol style="list-style-type: none"> 1. DLNR provides info on features on our social media (Facebook, Instagram), website and Outer Spatial app.; 2. People self-select locations to visit as they please; 3. No feedback loop between recreationalists and community members (sometimes communities will put up signs); 4. DLNR occasionally does press releases of violations (illegal fishing etc)
<p>Users <i>(Who would use the application - employees or constituents or both? How many users would there be?)</i></p>	<ol style="list-style-type: none"> 1. Residents and visitors – outdoor recreationalists, people who want to learn about local customs and environments, people who want to earn free stuff; 2. Employees – using data to understand how features are used; feature maintenance and community needs; access to people who want to volunteer at exclusive access sites; 3. Law Enforcement – use data to target problem areas and gauge effectiveness of education campaign on voluntary compliance with laws; 4. Local Businesses – use app to drive patronage to their business, supporting local services and products.
<p>Business Rules</p>	<p>Identify any business rules or constraints that would impact solution approach – (for example if your app was to collect field data for an Animal tracking app, you might specify the app should be limited to android devices because that is what would be supplied to collectors).</p> <p>Data would be updated on a regular basis to provide accurate/timely information available on the fly (refreshed every minute?); ESRI products/enterprise license, incorporation into the Outer Spatial app and DLNR website powered by WordPress; curate activity feedback information for managers. Upload data from DOCARE violations database. Link to social media sites – Facebook, Instagram, Ticktock etc.</p>
<p>Special Requirements</p>	<p>Identify any special non-functional requirements, such legal, privacy or performance issues to be considered during design or implementation</p> <p>Track resident, military, visitor users; development of point allocation and earning tracking system to link users to vendors; username/account needs to be secure. Vendors need to have access to charge points from users and upload new rewards that can be redeemed; way to upload documentation to be validated to redeem points – such as linking with Ticktock duet to document that the action was taken or 808 cleanups style – GPS point and photo documentation. Ability to send push notifications to keep players engaged.</p>

	<p>Vendors need to have a variety of ways to participate: free product, percentage off purchase, buy one get one free.</p> <p>Multi-layered access – ability to earn better product or higher discount for high earners; more access to exclusive opportunities; earn badges; incorporate game theory and new technology to retain interest and participation.</p> <p>Ability to add vendors and product as interest/participation grows or availability changes over time.</p>
<p>Technical Platforms <i>(in use or desired to be used)</i></p>	<p>ESRI products/enterprise license, ultimately incorporating into the Outer Spatial app would be a goal; WordPress for DLNR website. Link to social media platforms – Facebook, Instagram, Ticktock etc; DOCARE violations database to provide info.</p> <p>Username/log in to use app; info protections; accrual and use of points.</p>
<p>Data set to be used or collected</p>	<p>ESRI - NAH Trail layer, DLNR managed land shapefiles, DOCARE data. Vendor data for rewards and point redemption; method for uploading GPS and documentation that action was taken that qualifies for redemption of points. List of behaviors or actions DLNR would like to see changed or players could participate in to earn points (picking up trash, marine debris, dog poop, legally parking, staying away from protected wildlife, being quiet in a neighborhood, cleaning boots with alcohol before hiking to protect ohia from ROD with number of points accrued for each action and link to products and services that can be redeemed at various levels).</p>
<p>Data set calculations or reporting needs</p>	<p>Visualization of use (numbers of outdoor enthusiasts), recreational features over time in specific time increments (Play Pono Progress); number of total users per day (management implications) – widget to visualize use over time per feature; widget to show number of users; popular things people do to gain points; widget to show DOCARE violations/warnings per area; leaderboard to compel participation and compliance; method for uploading GPS and documentation that action was taken that qualifies for redemption of points. Widget to drive competition – messages notifying players that they are almost at the next level, that there is a high value point gaining opportunity close to them, etc.; announcements that certain goals have been met and all users get bonus points for achieving a level as a community.</p>
<p>Solution Road Map</p>	
<p>Basic Flow <i>(steps of user action/system response)</i></p>	<ol style="list-style-type: none"> 1. Users download app/visit website; 2. Create a username/password; 3. Select island/type of action of interest; 4. Zoom into map with recreational features/options for gaining points 5. Filter/tag options – vendor rewards, types of activities to gain points, kid friendly, level of difficulty, ADA accessible, etc.; 6. User logs points, validates activity, points awarded, user visits a vendor to redeem points (pay for item with points), vendor validates the points

	and deducts them from the users account.
Goal of Solution	Develop a framework/prototype whereby DLNR could develop a SOW to contract full development of tool for use on existing platforms. DLNR is seeking grant funds for full development.
Business Value <i>(potential financial or time savings)</i>	The goal is to change behavior of users to be more environmentally and socially acceptable, improve safety (since 2007, there has been an increase in rescues), and decrease conflict between “locals”, “visitors”, “military”, and newcomers to the islands; promote voluntary compliance with DLNR rules; promote local business patronage; promote values consistent with Hawaiian cultural norms.
Success Scenario <i>(how you know a solution is working)</i>	Straightforward framework/prototype to put out to bid for full development; prototype that could use live data for launch; easy to use by novice/public, platform is fun, informative, and makes people want to use it and stay engaged.
To be completed by the HACCC Planning Committee	
Community/Industry Data Available	
Potential Community/Industry Co-Sponsors	